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Prospective Of Innovative Applications On IT/ITES (Domain Specific In Marine Segment): Role/Development Of Incubation & Innovation Center In Vizag (INDIA) City Clusters

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Abstract:

The introduction of new or improved processes, products or services based on new scientific/technical knowledge and/or organizational know-how, is a powerful and fundamental determinant of firm competitiveness of enterprises in fast growing high-tech sectors[1]. Thus attracts the need for the growth of the domain specific development IT/ITES innovation.

The Incubator is often the first building block for a future technology park. Both Park and Incubator are workplaces, which share some features – both typically require initial subsidy and a good business environment. But they are quite different in significant respects – the park is essentially a major real estate development for existing research and technology related organizations, while the incubator is for start-up and early-stage ventures that still needs concept proof and require nurturing. Both are evolving to meet the challenges of commercializing of technology and supporting enterprise creation, within the framework of the technological revolution and the liberalizing global markets.

With the whole world falling into a deep and long financial and economic crisis, all business sectors are faced with unprecedented difficulties and cutting-throat competition on the market. Lower cost, higher operating efficiency and being more responsive are key to survive. The implementation of IT and ITES could help to achieve these goals will also largely determine the future of IT and ITES itself. IT & ITES for shipping industry will focus its growth path on how the shipping industry should change to fight against the crisis and how IT and ITES could facilitate these changes and deliver real business performance improvements.

Number of world leading marine, Power & petroleum industry are using IT and ITES as the key impediment tool for the growth in the productivity, profit and customer satisfaction. Some of the big IT and ITES providers such as IBM, SAP, Siemens AIS, and Perot Systems are already in the market for providing the solution for the need of the Industry, i.e. Fighting Against the Crisis with IT and ITES tools, M&A and the Governance of Company Groups and Cost and Quality Control. Now, we feel there is an opportunity for SMEs to invent in the specific field and the incubation center will give the platform to the SMEs to grow and conceptualize the idea into an implementation tools.

Creating of a domain specific Incubation center for the Engineering Services on domain specific application on Marine, Power & Petroleum segment, where the park is getting good response for the need of incubation center specific to domain specific application as cluster specific development. As per the NASSCOM report for the engineering service there is huge opportunity for the Indian IT and ITES industry with 10-15 billion US $ global outsourcing market on Engineering service specially on the domain specific.

The development of software (IT/ITES) today is a craft industry. In times it will becomes a manufacturing enterprises based on an engineering discipline in the domain expertise area.

The above domain specific incubation facility on Marine, Power & Petroleum Industry, where IT professionals and domain knowledge experts will mutually resolve/ develop the solution for the Marine, Power & Petroleum domain specific Industry and also to disseminate the experience in utilizing IT and ITES applications to improve management, operating efficiency and product quality, reduce consumption and pollution, lower cost and enhance competitiveness including increasing the operation on route and more better ship building.

It has also identified some of the companies who are now working in the above domain Engineering Services (Marine, Power & Petroleum) in India on above sub domain area. It is also felt that Vizag is already with good pool of manpower including the advanced port of the country including the Ship Building. There are many small and large industry are operating from the Vizag, who has setup their operations in and around Vizag including the presence of Indian Navy. The idea of setting up the incubation and innovation center is to cater to the need of export market/segment. Accordingly, the outsourcing of IT and ITES needs may also be fulfilled for the current domain expertise and pool of manpower available from this region for the Engineering Services.

Keywords: *SMEs ---- Small and Medium Enterprises, ITES – Information Technology Enabled Service, Engineering services, domain. Incubation and innovation center*

1.Introduction

The recent World Bank's review on Small Business activity establishes the commitment of World Bank Group to the development of the Micro, Small and Medium Enterprises (MSMEs) sector as a vital element in its strategy to foster economic growth, employment and poverty alleviation. The Indian SMEs of the IT industry demonstrates the tremendous growth/value that the Indian IT industry provides to its customer/development effort which encourages existing MSMEs to do more business. The domain specific incubator provides a development platform as common growth for the growth of the budding industry for the growth of innovation. The technology incubator has played vital role in success/ growth of IT & ITES industry and has fuelled of MSMEs segment in a significant manner.

The revolutionary adaptation of information technology (IT) in recent decades has had an enormous impact on personal life, business, and society at large. And the pace of this 'information revolution' shows no signs of slowing down. In almost all industries, including the maritime and energy sectors, the level of automation is still increasing, and ever more systems are becoming 'software intensive'. Additionally there is an ever-growing dependency on information systems for decision support for domain specific, at both operational and managerial levels for engineering services.

For all practical purposes, information systems and software in industrial systems has become a 'critical asset'. Although intangible, many organizations have started to manage their IT as they would any asset that is critical to their business. For instance, in the maritime and energy sectors this means that IT has a direct association with the safety and operational continuity of vessels and offshore structures. IT is no longer just a nice-to-have 'cherry on the cake' – it has become a must-have ingredient of the cake itself. For successful management of IT as a critical asset, organizations need to be constantly aware of new opportunities, challenges, and trends with respect to IT. Thus, organizations can use IT to become more competitive, to support efficiency and automation, and to manage safety and the environment more effectively.

The Indian IT & ITES industry market continue to enhance momentum, with offshore/outsourcing becoming a mainstream phenomenon. A growth of about 28 percent by the Software and Services industry places this sector among the highest performers within the Indian market. The Indian IT industry generally covers SMEs which accounts for 78 % of the total Industry. The SMEs contribute around 26% of the total national export in the IT and ITES industry.

This paper introduces about the domain specific IT & ITES industry (in the field of port, shipping, cargo, energy etc.) as the key success to the domain specific SMEs for the Indian IT and ITES industry and the need to focus on the facility provision in the technology innovation & incubator. It enables researchers to compare the extent of growth SME activity of a specific country with that of other countries in the same geographical region or the countries with similar level of expertise/facilitation in incubator and the impact in the income level on the need of the domain specific a vehicle as regional growth.

Some of the very important and main reasons for India to focus on software industry including the domain specific initiative can be summarized as below:

- The increasing request for Software product locally and globally
- The availability of qualified experts in the field of software
- The low cost of the qualified Indian manpower in software, makes the products of this industry very competitive.
- Establishment of unambiguous policy to stand up with Information Technology (IT)
- Knowing the degree of flexibility in applying the proposed mechanisms to achieve the required policies.
- The significant of STP Scheme and setting up of STPI across 53 location, which is stated below:
- High level of technicians are administrating the parks and managing the STP scheme, which knows the complexity of IT & ITES export and provide single window supports which will help in the growth of the domain specific initiative on IT/ITES domain on maritime and energy.
- The 100% foreign investment is permitted
- Encouragement to entrepreneurship including the growth of MSMEs by providing handholding support.
- Provide and help companies with consultancy and services
- Identifying the cluster specific city to identify the growth of domain specific initiative

The main consequences of this development make direct impact in the IT & ITES export market and Following are few milestone achieved by the Indian SMEs in IT and ITES industry, where the technology park also contributes a great help to grow:

- An interesting industry trend that has been noticed in recent years is the expansion of the Indian IT industry's presence from beyond traditional destinations, to newer geographies. The industry's focus is no longer on English-speaking countries alone, and a key strategy for Indian IT majors has been to harness local talent to tap domestic markets and de-risk the revenue model by reducing their dependence on one geographical region.
- The regions like Europe and US remain the key markets, accounting for over 90 per cent of IT-ITES exports. However, export earnings from markets other than the US and the UK are also witnessing significant double-digit year-on-year growth.
- While Indian service providers have built delivery centers in key source markets (e.g. US), they are expanding their footprints in specialist locations like China for engineering and design; South Africa for insurance, and near-shore locations like Eastern Europe and Mexico. Apart from companies in the US, organizations from Europe, South East Asia, Australia, Japan, Hong Kong, New Zealand, etc. are also reaching out for Indian software expertise, supported by the conducive policy environment and incentives for software exports offered by India.
- Demonstrated abilities of India-based firms to broaden their service portfolio, leverage productivity and utilization levels to sustain competitiveness and enhance their global service delivery capabilities – while maintaining high levels of growth.

The ability of most SMEs to survive, grow and generate new high quality jobs increasingly depends on their capacity to put innovation at the core of their business strategy in order to harness benefits from technological change and the globalization of markets for products and resources. In turn, small innovative firms, especially young ones (startups), play a vital role in ensuring the vitality of regional and national innovation systems, and thus enhancing significantly the growth potential in all economies. The Knowledge Based Economy is presenting new challenges as well as opportunities to SMEs.

However, many MSMEs have not yet developed a culture of innovation and those that do invest in innovation may still face obstacles in pursuing this strategy. Here lies a huge

potential source of technology growth, quality job creation and social well-being that can be met through technology incubators[4].

2.Visakhapatnam An Ideal Destination For The Domain Specific Incubation And Innovation Center In Maritime And Energy

The revolutionary adaptation of information technology (IT) in recent decades has had an enormous impact on personal life, business, and society at large. And the pace of this 'information revolution' shows no signs of slowing down. In almost all industries, including the maritime and energy sectors, the level of automation is still increasing, and ever more systems are becoming 'software intensive'. Additionally there is an ever-growing dependency on information systems for decision support, at both operational and managerial levels.

STPI has nationwide presence and currently it operates from 53 centers across India. STPI was established in Visakhapatnam in the year 2000 and from then it is putting its effort to promote the IT/ITES industries in Visakhapatnam. Recently Visakhapatnam has taken new initiative for establishment of a Domain Specific Innovation and Incubation Centre in Maritime domain in association with VUDA and in the mentorship of Indian Maritime University. Visakhapatnam is poised to become a prominent Tier II destination and Marine Domain IT industry development with the availability of necessary talent resources will make Visakhapatnam a prominent destination in India.

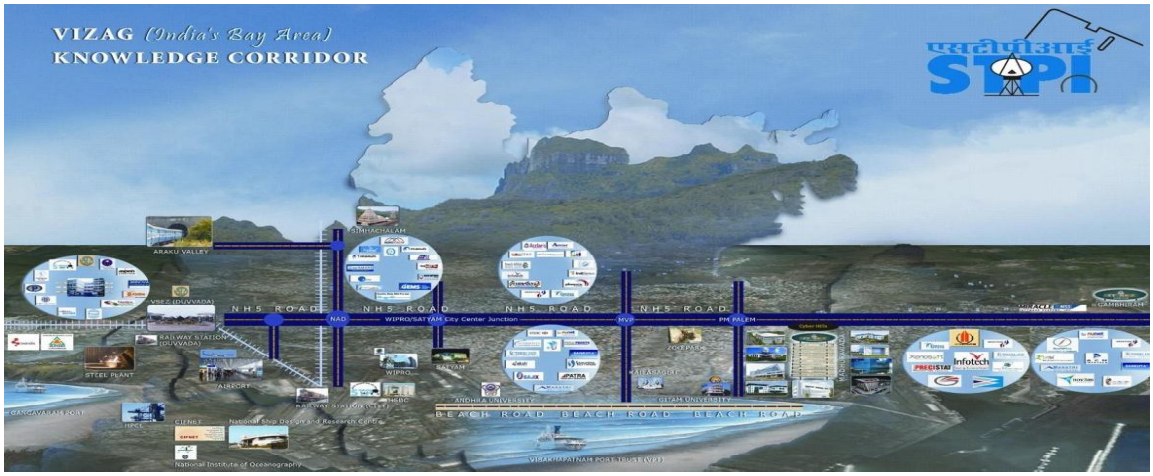

Figure 1

To support insight and to prevent information overload, both trends and industry are only briefly described above, with pictures and graphics providing further clarification. The

[4] *Schneider, F (2000) the size and the development of shadow economics and shadow economy Labour force of Asian and 21 OECD counties ::*

overview is focused and organized around themes that are of particular interest to the maritime and energy sectors.

With the maritime and energy industries' ever-growing dependency on IT, it is vital that organizations are able to manage their IT-related risks and are prepared for current and future challenges and opportunities.

3.Domain Specific

Due to the port city of India, the city already created a well defined cluster on the "Maritime and energy". The city is availability of skilled domain specialized manpower including the education and R&D organizations. As per the above figure the Vizag city is divided into three clusters which are surrounded by the Industry and academic institution including the secondary units for creating a domain specific cluster.

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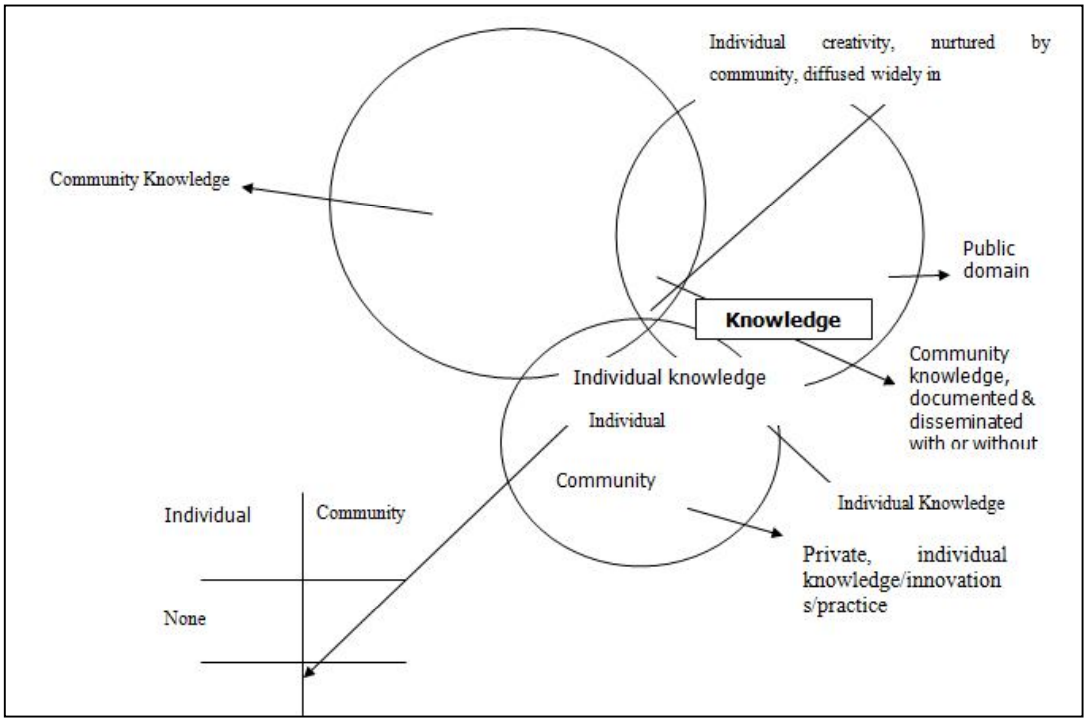

Figure 2: Contested Domains of Local Knowledge

To enable the growth of IT/ITES maritime domain application, identification of 45 key technology areas were identified in the field of marine application for nurturing the growth of the innovation platform i.e. Robotics, unmanned vehicle, paint sensors, fleet broadband, Deep sea coats, fleet management system etc. There is natural expectation that few innovative product could come out from new incubates.

4.Key model for domain specific Incubator

The Incubator is often the first building block for a future technology park. Both Park and Incubator are workplaces, which share some features **–** both typically require initial subsidy and a good business environment. However, they are quite different in significant respects **–** the park is essentially a major real estate development for existing research and technology related organizations, while the incubator is for start-up and early-stage ventures that still needs concept proof and require nurturing. Both are evolving to meet the challenges of commercializing of technology and supporting enterprise creation, within the framework of the technological revolution and the liberalizing global markets.

There is the potential for synergy between a technology incubator and a technology park. It could be advantageous to start with the small investment and time requirement of an incubator, making provision of space for a future technology park. The graduating clients can be re-located in the park.

This potential can however best is realized if their goals are broadly similar and the management and operations are meticulously planned from the start for such integration. Real estate to large companies could be used to cross-subsidize the early-stage groups in the incubator. Further, park and incubator can cooperate to compete.

5.Typical Indian Domain specific incubators' _____

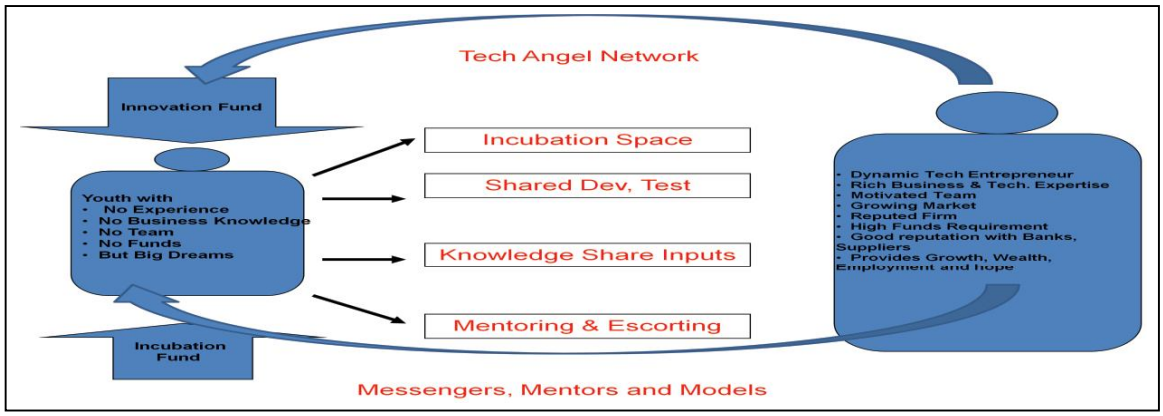

Figure 3

The domain specific incubator is a setup in the cluster specific city where availability of the key professional available including the innovation platform. The city need to have a specific domain specific cluster and surrounded by secondary industry due to the development of specific cluster development for the growth of the synergic industry.

Domain specific Technology Business Incubator (DSTBI) is a mechanism to provide technology, advisory, training and information services, management and marketing support, linkages to research faculty and facilities, access to capital, thereby greatly enhancing the chances of success of the early stage technopreneur). It is a cost-effective instrument for technology transfer and the development of knowledge-based and high-tech enterprises.

The main objective of Technology Business Incubators is to facilitate the seeding stage technological development and to compete in the global market place.

However, the technology incubators are commonly known to include the concepts of Technology Business Incubator (TBI) and innovation centers. The goal of technology incubators is also to promote technology-based firms, and to address regional and local developmental issues through Science and technology. TBIs are located in or near technical academic/R&D institutions and are characterized by institutional links to knowledge sources including technology transfer agencies, research centers, national laboratories and skilled R&D personnel. TBIs promote technology transfer and diffusion while encouraging Entrepreneurship among researchers and academics.

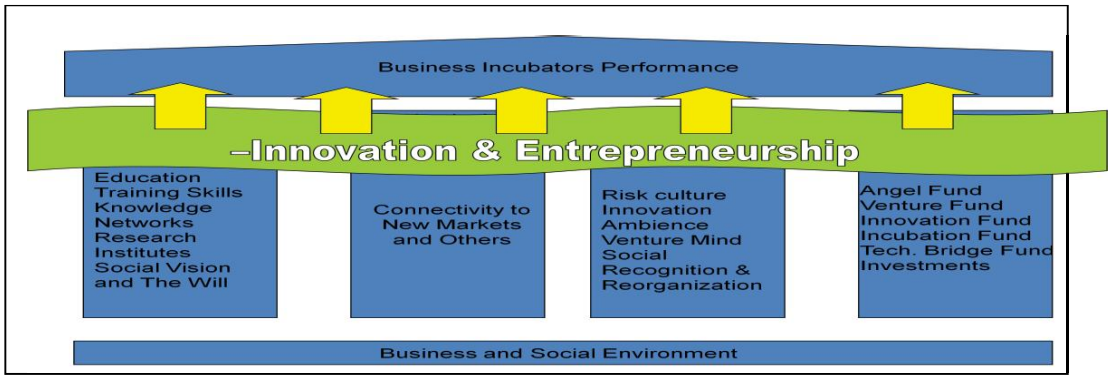

Figure 4: The Domain specific Incubators: innovation vs Entrepreneur

A DSTBI is a managed workspace with low cost office facilities (workplace) and business and professional services necessary for nurturing and supporting early stage growth of technologies and technology based enterprises. The services may include modern communication and information services, and access to the R&D, testing, design and engineering etc., facilities and services including mentoring. The objective is to cover some of the risks involved in the early stages of incubation of technologies and technopreneurs particularly in the area of high-end technologies. In addition to workspace, the services provided by incubators can include various forms of business planning and managerial advice, office facilities, finance and accounting access to business networks, and legal services besides utilities.

6. Key success factors - for domain specific Technology development: Benchmarking

The determinant factors that contribute to the ultimate economic, social and political success of a new business incubator and tech-park evolve with the stages through which the facility develops from the initial design to sustained operation. Experience indicates

that in industrializing countries, without patient and continuing support from the state and community over the whole program cycle, developing sustainable performance and having positive impact on economic development will become difficult.

Figure 5

Benchmarking is a dynamic process of identifying good outcomes in Technology development in this instance converting the IT professional to domain specific development, which could be attributable to their successful practices, and adapting these to another group's operations (in the current paper we have taken the real case study of the impact of domain specific application into the real time IT application for implement in maritime needs in terms of benchmark).

To nurture the innovation on the domain specific concept with the help/mentorship of IMU, Vizag, we able to simulate the concept of the innovation from the future budding entrepreneurs', who are the students of different engineering college to innovate the concept of domain specific IT development with multi discipline engineering branches of eng colleges. It is a live case study where mentorship can able to help to innovate in marine application. The below photograph is shown as the 1st award out of 21 eng colleges.

Thus to search the talent a benchmarking program is intended to assist management's to progressively up-grade their performance, attribute by attribute, in the interests of their sponsors, their tenants, and the incubation industry. The purpose is NOT to find persons to blame or excuses to cover incompetence, but to take prompt, fair actions to remedy the causes of failure and to enhance the effectiveness of performance. Overall, it should help an incubator in the needed transition from the first generation mode (essentially

subsidized space and shared facilities), towards a more dynamic operating model (intensive, for-profit services and networking).

Figure 6

It is a continuous learning and self-correcting process with quantitative comparisons of performance at participating eng colleges. It is best undertaken within a region, preferably one which has an association or focal body to help mobilize a consensus among participating incubators, implement the program, compile and circulate relevant statistics, anonymously if necessary.

7.Conclusion

This paper introduces a new and unique set of in-country indicators of the Technology Incubator in domain specific application in Maritime, Power & Petroleum applications the concept and the growth for SMEs industry, which indicates the growth in the employment and wealth creation including innovations.

This paper also suggests that varieties of variables are needed to be implemented for the growth of the domain specific technology incubation concept, which are of relative importance of SME segment in IT & ITES industry and pertains to innovations

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NOTE : This paper is prepared based on the author work view at Vizag and can be seen as author personal view and not the view of the Organization

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